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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/678,630 | 10/03/2000 | Ian J. Forster | 4579-083 | 6785 |

27820 7590 09/04/2003

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| EXAMINER |
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YUN, EUGENE

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| ART UNIT | PAPER NUMBER |
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2682

DATE MAILED: 09/04/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,630

Applicant(s)

FORSTER, IAN J.

Examiner

Eugene Yun

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 37-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 & 6.
- ☐ Interview Summary (PTO-413) Paper No(s). ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-36, drawn to a multi-antenna device, classified in class 455, subclass 272.
 - II. Claims 37-42, drawn to comparing outputs in different frequencies, classified in class 455, subclass 226.1.
2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not state specific functions of the wireless communication device as the subcombination does. The subcombination has separate utility such as comparing the outputs of two separate antennas in two separate frequencies.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Steven Terranova on 8/18/2003 a provisional election was made without traverse to prosecute the invention of group I.,

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claims 1-36. Affirmation of this election must be made by applicant in replying to this Office action. Claims 36-42 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 26, 27, 29, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Gouin (US 6,211,846).

Referring to Claim 26, Gouin teaches a transponder, comprising:

a dipole antenna 6 (fig. 1);

a first loop conductor antenna1 (fig. 1);

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a second loop conductor antenna 3 (fig. 1), said first and second loop conductor antennas positioned on opposite sides of said dipole antenna and capacitively coupled thereto (see positioning of antennas in fig. 1).

Referring to Claim 27, Gouin also teaches communication electronics commutatively coupled to said antennas (see fig. 1).

Referring to Claim 29, Gouin teaches a wireless communication device comprising:

wireless communication electronics (see fig. 1);

an asymmetrical dipole antenna 6 (fig. 1) operatively connected to said wireless communication electronics, said dipole antenna operative at a first frequency; and

at least one loop antenna 1 (fig. 1) capacitively coupled to said dipole antenna and operative at a second frequency (see positioning of antennas in fig. 1).

Referring to Claim 30, Gouin also teaches a second loop antenna 3 (fig. 1) capacitively coupled to said dipole antenna and operative at a third frequency (see positioning of antennas in fig. 1).

7. Claims 14-16, 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Proctor et al. (US 6,346,922).

Referring to Claim 14, Proctor teaches a wireless communication system comprising:

a first wireless communication device 26 (fig. 2) coupled to a loop conductor antenna 28 (fig. 2) operating at a first frequency;

a second wireless communication device 34 (fig. 3A) coupled across said loop conductor antenna 36 (fig. 3A) on one side of said first wireless communication device; and

said second wireless communication device coupled to said loop conductor antenna including said first wireless communication device at a second operating frequency (fig. 3A) and coupled to said loop conductor antenna excluding said first wireless communication device at a third operating frequency (fig. 3B).

Referring to Claim 15, Proctor also teaches an interrogator 12 (fig. 1) operating at one of said frequencies and interrogating one of said wireless communication devices 14.1-14.n (fig. 1).

Referring to Claim 16, Proctor also teaches an article 20 (fig. 1) to be tracked by one of said wireless communication devices, said article attached to one of said wireless communication devices.

Referring to Claim 18, Proctor also teaches the second wireless communication device operating at 868 MHz and 915 MHz (see col. 3, lines 46-49).

Referring to Claim 19, Proctor also teaches a dipole antenna operating a fourth frequency (see col. 2, lines 57-60).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 3-5, 8-13, 21, 24, 25, 31, 32, 34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouin in view of Carr (US 4,433,336 "IDS") and Lake (US 6,089,458 "IDS").

Referring to Claim 1, Carr teaches a wireless communication device comprising:
a communication electronics (see PROCESSOR in fig. 1);
a first loop conductor antenna 40 (fig. 1) operating at a first frequency, said first loop conductor antenna operatively connected to said communication electronics;
a second loop conductor antenna 41 (fig. 1) operating at a second frequency, said second loop conductor antenna operatively connected to said communication electronics;
a pole antenna 42 (fig. 1) operating at a third frequency, said pole antenna operatively connected to said communication electronics.

The combination of Gouin and Carr does not teach communication electronics selectively communicating with a remotely positioned interrogator through one of said antennas. Lake teaches communication electronics selectively communicating with a remotely positioned interrogator 14 (fig. 1) through one of said antennas 32 (fig. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Lake to said device of Carr in order to more easily detect the location of a transponder.

Referring to Claim 3, Carr also teaches said first loop conductor antenna operating at 13.56 MHz (see col. 2, lines 11-14).

Referring to Claim 4, Carr also teaches a third loop conductor antenna 15 (fig. 1) operating at a fourth frequency.

Referring to Claim 5, Carr also teaches said first loop conductor antenna, said second loop conductor antenna, and said third loop conductor antenna share a loop conductor 17 (fig. 1).

Referring to Claim 8, Gouin also teaches said pole antenna comprising a dipole antenna 6 (fig. 1) and second communication electronics 6b (fig. 1), the first communication electronics associated with one of said loops 1 (fig. 1) and said second communication electronics associated with said dipole antenna.

Referring to Claim 9, Gouin also teaches said pole antenna positioned between said first loop conductor antenna and said second loop conductor antenna and capacitively couples to said first and second loop conductor antennas (see positioning of antennas in fig. 1).

Referring to Claim 10, Gouin also teaches said pole antenna positioned across said first and second loop conductor antennas (see positioning of antennas in fig. 1).

Referring to Claim 11, Carr also teaches said pole antenna comprising at least one tab 18 (fig. 1).

Referring to Claim 12, Carr also teaches the pole antenna comprising a ground plane 27 (fig. 1) and said tab comprising a monopole antenna (see ABSTRACT).

Referring to Claim 13, Gouin also teaches said pole antenna comprising two tabs 6 and 6b (fig. 1) to form a dipole antenna.

Referring to Claim 21, Lake teaches interrogating a wireless communication device at a first frequency (see fig. 1) through a first loop conductor antenna 32 (fig. 3) on the wireless communication device.

The combination of Carr and Lake does not teach the wireless communicating device also comprising a dipole antenna operating at a second frequency and a second loop antenna operating at a third frequency. Gouin teaches the wireless communicating device also comprising a dipole antenna 6 (fig. 1) operating at a second frequency and a second loop antenna 3 (fig. 1) operating at a third frequency. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gouin to said device of Lake in order to more easily detect the location of a transponder.

Referring to Claim 24, Gouin also teaches a third loop conductor antenna 2 (fig. 1) operating at a fourth frequency.

Referring to Claim 25, Lake also teaches communicating from an interrogator 14 (fig. 1) to a central control system 12 (fig. 1).

Referring to Claims 31 and 32, Carr teaches a slotted ground plane 27 (fig. 1) operative with a pole antenna 42 (fig. 1). Carr does not teach the pole antenna as a dipole antenna. Gouin teaches the pole antenna as a dipole antenna 6 (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gouin to said device of Carr in order to have a multi-frequency antenna radiate better omnidirectionally.

Referring to Claim 34, Carr also teaches said one loop antenna operative at a low frequency (see col. 2, lines 11-14).

Referring to Claim 36, Carr also teaches said at least one loop antenna comprising a nested part 13 and 14 (fig. 1) to increase bandwidth reception on said at least one loop antenna.

10. Claims 2, 6, 17, 22, 23, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouin, Carr, and Lake in view of Proctor et al. (US 6,346,922).

Referring to Claim 2, the combination of Gouin, Carr and Lake does not teach a first loop conductor operating at 868 MHz. Proctor teaches a first loop conductor operating at 868 MHz (see col. 3, lines 46-49). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Proctor to said device of Gouin in order to reduce interference in a multi-frequency antenna.

Referring to Claim 6, Carr teaches a loop conductor antenna operating at 13.56 MHz (see col. 2, lines 11-14). The combination of Gouin, Carr, and Lake does not teach a first loop conductor operating at 868 MHz and a second loop conductor operating at 915 MHz. Proctor teaches a first loop conductor operating at 868 MHz and a second loop conductor operating at 915 MHz (see col. 3, lines 46-49). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Proctor to said device of Gouin in order to reduce interference in a multi-frequency antenna.

Referring to Claim 17, Proctor does not teach first wireless communications device operating at 13.56 MHz. Carr teaches first wireless communications device operating at 13.56 MHz (see col. 2, lines 11-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Carr to said device of Proctor in order to reduce interference in a multi-frequency antenna.

Referring to Claim 22, Proctor teaches interrogating the wireless communication device (fig. 1) through a dipole antenna 34 (fig. 3A) on the wireless communication device. Proctor does not teach the dipole antenna capacitively coupled to said first and second loop conductor antennas. Gouin teaches the dipole antenna capacitively coupled to said first and second loop conductor antennas (see positioning of antennas in fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gouin to said device of Proctor in order to more easily detect the location of a transponder.

Referring to Claim 23, Proctor teaches interrogating the wireless communication device (fig. 1) through a dipole antenna 34 (fig. 3A) on the wireless communication device. Proctor does not teach the dipole antenna positioned across said first and second loop conductor antennas. Gouin teaches the dipole antenna positioned across said first and second loop conductor antennas (see positioning of antennas in fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Gouin to said device of Proctor in order to more easily detect the location of a transponder.

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Referring to Claim 33, the combination of Gouin, Lake, and Carr does not teach the dipole antenna operative at a microwave frequency. Proctor teaches the dipole antenna operative at a microwave frequency (see col. 2, lines 57-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Proctor to said device of Gouin in order to reduce the dependency of the proximity of other objects.

11. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gouin in view of Ehlers (US 4,727,598).

Gouin teaches a second loop antenna capacitively coupled to said dipole antenna. Gouin does not teach a second loop antenna operative at a UHF frequency. Ehlers teaches a second loop antenna operative at a UHF frequency 32 (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Ehlers to said device of Gouin in order to reduce interference in a multi-frequency antenna.

12. Claims 7, 20, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouin, Carr, Lake, and Proctor in view of Goff et al. (US 6,154,137).

Referring to Claims 7, 20, and 28, Proctor teaches a first loop conductor operating at 868 MHz and a second loop conductor operating at 915 MHz (see col. 3, lines 46-49). The combination of Gouin, Carr, Lake, and Proctor does not teach said dipole antenna to operate at 2.45 GHz. Goff teaches said dipole antenna to operate at

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2.45 GHz (see col. 5, lines 13-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Goff to said device of Gouin in order to reduce interference in a multi-frequency antenna.

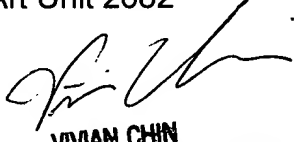
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (703) 305-2689. The examiner can normally be reached on 8:30am-5:30pm Alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

EY

Eugene Yun
Examiner
Art Unit 2682


VIVIAN CHIN
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8/22/03